Evaluation of the air quality impact of Peace Bridge operations in Buffalo, NY

The Division of Air Resources has been asked to develop a monitoring plan to determine the air quality impact of vehicle traffic and plaza operations at the Peace Bridge in Buffalo, NY. Over the last nine years, the average number of daily vehicle crossings at the Peace Bridge was 17,920 vehicles and approximately 20 percent of these vehicles were heavy duty trucks. The Peace Bridge is the highest volume border crossing in Western New York and the second highest border crossing between the United States and Canada. Traffic approaching or leaving the Peace Bridge Plaza generally uses I-190 which has an average daily traffic of approximately 77,000 vehicles. In comparison, the George Washington Bridge connecting New York and New Jersey has an average daily traffic of approximately 280,000 vehicles

Monitoring the air quality impact of Peace Bridge operations requires, at a minimum, upwind and downwind monitoring sites. Careful selection of the monitoring sites is necessary to adequately determine the impact of bridge operations without including other nearby sources of air pollution. The upwind site should be located in or near Front Park, on the east side of I-190. The downwind location should be on the east side of Busti Ave., near the abandoned Episcopal Home. Each of these sites will include monitoring equipment for ambient particulate matter, metals, sulfur, and black carbon. One of the sites will measure meteorological data. Specific equipment needs and the monitoring budget are listed in the tables below.

Monitoring Site Equipment	**Equipment Availability**
Monitoring shelters	Existing, one trailer mount, one sectional
Continuous PM 2.5 monitor	Existing equipment (in need of repair)
Manual PM monitor operated on 1day in 6 schedule	Existing equipment (in need of repair)
Aethelometer for black carbon	Existing equipment
Meteorological System	Purchase
Industrial PC for data collection	Purchase

Budget Item	**Cost**
Electrical installation for monitoring shelters	2 @ $5000
Security fence installation	2 @ $2000
Repair parts for existing equipment	$10,000
Meteorological system	1@ $5,000
Industrial data PC	2@ $7,200
Particulate filter analysis (1in6)	2@ $6,500/yr
Electricity for monitoring site operation	2@ $2,000/yr
Data line for monitoring site	2 @ $300/yr
Travel cost for equipment installation, removal and performance audits	$2,500

Partnering Proposal

DEC proposes to partner with the Public Bridge Authority (PBA) to provide monitoring near the Peace Bridge. The monitoring program will be conducted in two separate six month campaigns. The first campaign will be conducted prior to beginning of construction at the Peace Bridge plaza and the second campaign will be conduct after construction is completed.

PBA commitments:

- Establish both monitoring sites including necessary site leases,
- Installation at each site of a16ft x 30ft security fence with a 12 ft wide locking gate at one end,
- Installation at each site of a 100 amp electrical service with breaker box
- Installation at each site of internet connection
- Provide a part time technical staff person to be trained by DEC to change the particulate sampling filters at each site, once every 6 days
- Pay electrical and internet costs during sampling campaigns
- Purchase of 2 industrial data PC's meeting DEC specifications
- Purchase of meteorological system for use at one monitoring site
- PBA estimated cost for project - $38,000
- PBA estimated manpower commitment for monitoring operations - 61 days

DEC commitments:

- Provide and install all sampling enclosures
- Provide and install all sampling equipment
- Repair sampling equipment as necessary
- Perform all quality control and quality assurance audits
- Fund all sample analysis
- Perform all data analysis
- Prepare final report after each sampling campaign, including comparison to previous sampling efforts.
- DEC estimated cost for project - $40,000
- DEC estimated manpower commitment for monitoring operations - 90 days